Amendments to the Claims:

This listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

22.   (Previously Presented)   A method of communicating charging information for a particular mobile station in a network including at least a serving node and a gateway node, comprising the following steps:

receiving, at said gateway node, a data packet comprising a header and a payload;

identifying a particular Packet Data Protocol (PDP) context for a particular mobile station;

gathering, at said gateway node and from said received data packet, charging information relating to said PDP context;

creating a General Packet Radio Service (GPRS) Tunneling Protocol (GTP) packet data unit, said GTP packet data unit including a header, a payload, and a predetermined extension header; and

transmitting, from said gateway node to said serving node, said GTP packet data unit containing said charging information, wherein

said charging information relates to said PDP context for said mobile station,

said pre-determined extension header is reserved for

service class information pertaining to at least one Internet Protocol (IP) packet payload for said PDP context, and

volume count information indicating a data volume of the payload, if said service class information applies to a payload of more than one GTP packet data unit, and

said header comprises a next extension header type indicating that said predetermined service class extension header follows.

25.   (Currently Amended)   The method according to claim 23, wherein said

charging node comprises a Customized Application for Mobile network Enhanced Logic (CAMEL) Service Control Point (SCP) node and said charging information is signaled by means of the CAMEL Application Part (CAP) protocol.

35.   (Previously Presented)   A gateway node for communicating within a system performing packet inspection and service classification, said system including a packet data network and a serving node, wherein Internet Protocol (IP) data packets are communicated for identification of a given predetermined service class out of a plurality of predetermined service classes within said system, said gateway node comprising:

        means for receiving, at said gateway node, an IP data packet from said packet data network;

        means for extracting the payload of said IP data packet;

        means for determining a value, out of a plurality of values corresponding to a plurality of different service classes, said determined value corresponding to a service class for said payload;

        means for assigning said determined service class to a service class extension header;

        means for determining assigning, to the service class extension header, volume count information indicating a data volume of the payload if the determined service class applies to a payload of more than one packet data unit;

        means for creating a packet data unit by including said service class extension header;

        means for inserting said payload in said packet data unit; and

        means for transmitting said packet data unit from said gateway node to said serving node.

36-41. (Cancelled)

42.   (Previously Presented)   A gateway node for communicating within a system performing packet inspection and service classification, said system comprising a

packet data network and a serving node, wherein Internet Protocol (IP) data packets comprising payload data are communicated for identification of a given predetermined service class out of a plurality of predetermined service classes within said system, said gateway node comprising:

means for receiving IP data packets in a continuous upstream of IP data packets associated with a given PDP context;

means for determining the service class of the payload data of said IP data packets associated with said PDP context;

means for storing an accumulated uplink volume count associated with said service class;

means for storing an accumulated downlink volume count associated with said service class;

means for generating service class extension headers for upstream payload, said headers containing said service class and said accumulated uplink volume count if said service class applies to a payload of more than one packet data unit;

means for generating service class extension headers for downstream payload, said headers containing said service class and said accumulated downlink volume count;

means for inserting said extension headers for said downstream payload in packet data units;

means for inserting said payload data in packet data units; and

means for transmitting said packet data units to said serving node.

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